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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,777	12/09/2003	Peter Ifju	5853-355	4921

30448 7590 04/05/2005

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EXAMINER

HOLZEN, STEPHEN A

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/731,777	<b>Applicant(s)</b> IFJU ET AL.	
	<b>Examiner</b> Stephen A. Holzen	<b>Art Unit</b> 3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6,9-17,20-24,32 and 33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6,9-17,20-24,32 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. The applicant's arguments filed 2/17/2005 have been fully considered.

Re – Claims 1 and 12: Fuller and Christian et al teach a flexible material for the wing (necessarily flexible since they are bendable). The material selected for improving wind gust rejection is merely a matter of design choice.

Re – Claim 2 and 13: The examiner asserts that as the claim is written, Fuller does disclose the limitations in this claim. Christian et al do not.

Re – Claims 9 and 20: The examiner agrees with the applicant's arguments that Christian et al and Fuller do not teach an aircraft that may be between about three inches and about twenty four inches. In fact Christian et al and Fuller are silent with respect to the size of the craft. However it would have been obvious to make the aircraft of Fuller with a wingspan between 3 and 20 inches as outlined below.

Re – Claim 11 and 22: The examiner agrees with the applicant's assertion that Fitzpatrick does not disclose risers. This argument is moot because the examiner has applied a new rejection to these claims.

Re – Claim 23: The examiner agrees with the applicant's statement that the wings of Christian are not orthogonal to the tail because the length-wise axis of the wings is not angled at 90-degrees to the lengthwise axis of the tail. However the claim language says "generally". Therefor Christian does disclose a wing and tail having axis that are "generally orthogonal".

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 6, 12, 15-17, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christian et al.

Re – Claims 1 and 12: Christian discloses a wing (14) having at least one layer of resilient flexible material (Figure 1 and 4) having a chamber forming a concave surface facing downward (#14 is concave), wherein the wing is bendable from a steady state position in a first direction such that the tips of the wing may be bent toward the concave surface but not substantially in a second direction that is generally opposite to the first direction and wherein the wing is capable of returning to the steady state position by releasing the tips of the wing (Abstract lines 1-4).

Christian does not disclose a material selected for improving wind gust rejection due to the adaptive washout as a result of the material flexibility dechambering. It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a material for improving wind gust rejection due to the adaptive washout, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin 125 USPQ 416.

Re – Claims 6, 15 -17: Christian does not disclose the selected material groups. However It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin 125 USPQ 416.

Re – Claim 23: further comprising a tail coupled to the central body (see Figure 1) that is “generally orthogonal” to the wing. The wing of Christian et al and the tail are “generally orthogonal” although they are not exactly orthogonal.

Re – Claim 24: further comprising a tail coupled to the central body that is generally vertical to the wing. (#18 is generally vertical in its deployed position)

4. Claims 1-6, 12-17, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller.

Re – Claim 1 and 12: Fuller discloses a wing (10) having at least one layer (15) of resilient flexible material having a chamber (This is a low chambered wing) forming a concave surface facing downward (see figure 2), wherein the wing is bendable from a steady state position in a first direction such that the tips of the wing may be bent toward the concave surface but not substantially in a second direction that is generally opposite

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to the first direction and wherein the wing is capable of returning to the steady state position by releasing the tips of the wing. (illustrated in Figure 6)

Re – Claims 2 and 13: wherein the at least one layer of a resilient material comprises a leading edge formed from a first material that is different from the material forming a remainder of the at least one layer. (see Col. 1, lines 35-37)

Re – Claims 3-6, 14-17, 32 and 33: Fuller does not disclose the selected material groups. However It would have been obvious to one having ordinary skill in the art at the time the invention was made to select a material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin 125 USPQ 416.

5. Claims 9, 10, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller in view of Michelson (6,082,671). Fuller discloses every aspect of the present invention except for the size of the aircraft. Michelson discloses that it is known in the art to design micro air vehicles no greater than 15cm in any dimension. (Abstract line 5) It would have been obvious to one having ordinary skill in the art to employ this idea into the device of Fuller for the purpose of performing reducing the visibility of the aircraft from the ground.

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6. Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller or Christian in view of Shulman (4,332,103). Neither Fuller nor Christian disclose a riser section forming a concave portion on an upper surface of the wing proximate to a trailing edge of the wing. Shulman however teaches that this is a well know design for to impart a slight climbing flight characteristic to the glider. (#30, see Col. 2, lines 65+) It would have been obvious to one having ordinary skill at the time the invention was made to use the riser design in the wing design of both Fuller and Christian for the purpose of increasing the aircraft dependency.

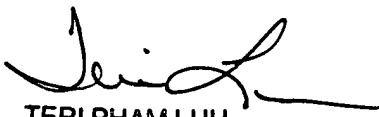
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 703-308-2484. The examiner can normally be reached on M-F 8:00-5:00. After April 4<sup>th</sup> the examiner can be reached on 571-272-6903.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 703-305-7421. After April 4<sup>th</sup>, Mrs. Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sah



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